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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,544	10/07/2003	Vladimir Fridman	P-1187	4997
7590	03/07/2005		EXAMINER	
Scott R. Cox LYNCH, COX, GILMAN & MAHAN, PSC. Suite 2200 400 West Market Street Louisville, KY 40202			NGUYEN, CAM N	
			ART UNIT	PAPER NUMBER
			1754	
DATE MAILED: 03/07/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/680,544	FRIDMAN ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Cam N Nguyen	1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on December 15, 2004 (an amendment/response, & a T.D.)

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-27 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-27 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 01/07/05.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_.

## **DETAILED ACTION**

1. Applicants' remarks and amendments, filed on December 15, 2004, have been carefully considered. Claims 1, 6-7, 9-10, 12, 15-16, 18-19, 23-24, & 26-27 have been amended.

Claims 1-27 remain pending in this application.

### ***Claim Objections***

2. Claims 1, 5, & 15 are objected to because of the following informalities:

- A. In claim 1, line 4, --as a promoter,--should be inserted after "chromium,".
- B. In claim 1, line 6, "," before "zirconium" should changed to -- ; --.
- C. In claim 1, line 8, --,-- should be inserted before "based on".
- D. In claim 1, line 9, "," before "and magnesium" should changed to -- ; --.
- E. In claim 5, line 3, --a temperature-- should be inserted after "at".
- F. In claim 15, line 19, --,-- should be inserted after "zirconium".
- G. In claim 15, line 23, --,-- should be inserted after "magnesium".

Appropriate correction is required.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-4, 6-22, 24-25, & 27 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 5-7, 9-13, 16, 18-24, & 26 of **copending Application No. 10/290,780** (hereinafter copending '780) *in view of* Kerby et al., "hereinafter Kerby", (US Pat. 5,258,567).

The major difference between the instantly claimed catalyst and that of the copending '780, is that the instantly claimed catalyst contains additional components magnesium and the alkali metal promoters, and their concentrations.

However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have not added the magnesium and the alkali metal promoters into the instantly claimed catalyst to result in a less promoted catalyst as claim in the copending '780 since magnesium and alkali metals are recognized promoters (or modifiers) to promote the catalyst activity, as evidenced by Kerby (see Kerby at col. 12, claims 12-14).

This is a provisional obviousness-type double patenting rejection.

5. Claims 1-4, 7, 9-10, 13, 15-16, 18, 21, 24, & 27 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being

unpatentable over claims 1-10 of copending Application No. 10/047,598 (hereinafter copending '598) in view of Kerby et al., "hereinafter Kerby", (US Pat. 5,258,567).

The major difference between the instantly claimed catalyst and that of the copending '598, is that the catalyst of the copending '598 does not contain "magnesium" as a promoter.

However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have not added the magnesium promoter into the instantly claimed catalyst to result in a less promoted catalyst as claim in the copending '598 since magnesium is a recognized promoter (or modifier) to promote the catalyst activity, as evidenced by Kerby (see Kerby at col. 12, claims 12-14).

This is a provisional obviousness-type double patenting rejection.

#### ***Terminal Disclaimer***

6. The terminal disclaimer submitted on December 15, 2004 is improper because the assignee name is missing. Thus, the ODP rejections are maintained.

#### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2, 7, 9-10, & 12-14, are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann et al., "hereinafter Zimmermann", (US Pat. 5,378,350) taken together with Kerby et al., "hereinafter Kerby", (US Pat. 5,258,567).

Zimmermann discloses a catalyst comprising chromium and aluminum oxides, at least one cesium metal compound promoter in an amount of 0.1 to 10% by weight of the catalyst, calculated as  $\text{Cs}_2\text{O}$ , and at least one zirconium metal compound as additional promoter in an amount of 0.1 to 15% by weight of the catalyst, calculated as  $\text{ZrO}_2$  (see col. 7, claim 1). Zimmermann further discloses that the catalyst comprising an  $\text{Al}_2\text{O}_3$  support with 10 to 50% by weight of chromium oxide, calculated as  $\text{Cr}_2\text{O}_3$ ; 0.1 to 5% by weight of a zirconium compound, calculated as  $\text{ZrO}_2$ ; and 0.1 to 10% by weight of a cesium compound, calculated as  $\text{Cs}_2\text{O}$  (see col. 7, claim 2). Zimmermann also discloses that the catalyst can contain additional promoters such as scandium, yttrium, lanthanum, titanium, zirconium or hafnium, individually or in combination (see col. 2, ln 21-25).

Zimmermann does not disclose magnesium, alkali metal promoter, and their concentrations. However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have added magnesium and alkali metal promoters to the catalyst of Zimmermann in order to achieve an improved catalyst having promoted activities because they are known and useful catalyst promoters (or modifiers), as evidenced by Kerby (see Kerby at col. 12, claims 12-14).

The claimed chromium and zirconium concentrations are met by the teachings of the reference since they fall within the disclosed ranges (see above).

9. Claims 3-6, 8, 11, & 15-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann et al., "hereinafter Zimmermann", (US Pat. 5,378,350) taken together with Kerby et al., "hereinafter Kerby", (US Pat. 5,258,567), as applied to claims 1-2, 7, 9-10, & 12-14 above, and further in view of Hamner (US Pat. 4,212,771).

Zimmermann discloses a catalyst (as described above) in combination with the magnesium and alkali metal components incorporated, which is disclosed by Kerby as discussed above (see the precedent paragraph), except for the carrier properties.

It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized such known carrier in Zimmermann because it is known as useful catalyst carrier, as evidenced by Hamner (see Hamner at col. 2, ln 41-61, col. 3, ln 24-27, & col. 6, Table I).

Regarding claim 5, it is considered the process limitation in the claim regarding how the carrier material is made has no bearing on the patentability of the claimed catalyst. Since the disclosed carrier material is the same as the claimed carrier, thus provides for the same catalyst.

With respect to the "chromium material" listed in claim 6, it is considered that the claimed chromium materials as listed is process limitation. Since the instant claims are called for "a catalyst", the process limitation as being claimed has no bearing on the patentability of the claimed catalyst.

***Response to Applicants' Arguments***

10. Applicants' amendment/response filed on December 15, 2004 has been fully reconsidered, but not deemed persuasive in view of the following reasons.

Applicants urged, that there is no motivation to combine the teaching of the Zimmermann et al. reference with the Kerby et al. reference since Kerby et al. discloses a dehydrogenation catalyst for a different type of feed stream containing both aromatic and non-aromatic hydrocarbons, etc. (applicants' response page 13, middle paragraph). It is considered both the Zimmermann et al. reference and the Kerby et al. reference disclose a dehydrogenation catalyst for treating hydrocarbons, and that the difference in the hydrocarbon feed stream that applicants argued has no bearing on the determination of the patentability of the dehydrogenation catalyst itself. In other words, a dehydrogenation catalyst is a dehydrogenation catalyst. Thus, it is considered the combination of the references are proper.

In response to applicants' arguments regarding the Cs compound of the Zimmermann et al. reference (applicants' response page 15, middle paragraph), it is admitted that the Cs compound must be added as a promoter in the catalyst of Zimmermann et al., however, the Cs is not being excluded from the claimed catalyst composition because it is an alkali metal component that applicants claiming in claims 13, 21, & 24. According to the Table I of the Zimmermann et al. reference, while it is admitted that the Cs is the most preferable alkali metal promoter compared to the other alkali metal or alkaline earth metal promoters, such as Na, K, Ca, and Ba (as shown in the Table I), the reference does not exclude other alkaline earth metal promoters or

modifiers, such as Mg of the Kerby et al. reference (see Kerby et al. at col. 12, claim 14). Especially, Table I of the Zimmermann et al. reference is not showing comparative results for Mg.

The remaining of applicants' arguments in the response have also been fully considered. However, in view of the above reasons, the arguments are not found persuasive. It is the examiner's position to conclude that the rejections are proper and thus they are maintained.

**11. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Conclusion***

12. Claims 1-27 are pending in the application. Claims 1-27 are rejected. No claims are allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (571) 272-1357. The examiner can normally be reached on Mon, Wed, Thurs, & Fri from 8:45 am. to 5:15 pm.

The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to telephone number (571) 272-1700.

Nguyen/cnn *CNN*

March 03, 2005

*Cam Nguyen*  
CAM N. NGUYEN  
PRIMARY EXAMINER

Art Unit: 1754